COUPP-0.1 water distillation procedure

The COUPP-0.1 bubble chamber uses C3F8 as its active fluid, but most of the chamber itself is filled with water. Before the chamber is filled with C3F8, water is distilled in until the vessel is full. The appropriate amount of C3F8 is then distilled in and water displaced through the chamber's bleed line. This procedure covers the distillation of water into the vessel. It should be performed after setting up the chamber's water bath, but before the hydraulic system is filled and initialized.

WATER DISTILLATION PROCEDURE

1. Set NESLAB chiller to ~x°C. Allow the chamber to cool down.
2. Close all valves except for MV-005, MV-016, MV-017, MV-019.
3. Attach a vacuum pump to MV-019 and pump down pressure chamber. The bellows should be extended about a quarter inch from its neutral position. Close MV-019 and switch off the vacuum pump.
4. Set up the water source container with a heat source and place it on a scale. Attach the transfer line to MV-011. Record the starting mass of water in the source container.
5. Open MV-011 and MV-012 and allow water to distill into the bubble chamber until water begins to come out of MV-012. This may take a while.
6. Close MV-012, then close MV-011. Distillation is complete.
7. Disconnect the transfer line. Record the final mass of the source container. Clean up any water that spilled from MV-012.